LETTERS TO THE EDITOR

Extending endoleak and endotension terminology to include complications of open aneurysm repair

Endoleak and *endotension* have proved to be useful additions to the terminology of endovascular aneurysm repair. As currently defined, both terms are restricted to describe complications of the endovascular method of aneurysm repair.[1-3]

Recent experience has led us to propose extending these two terms to include complications of open aneurysm repair. We reported 5 patients who presented acutely with abdominal pain and sac enlargement due to seroma at a mean of 4.5 years after open abdominal aortic aneurysm (AAA) repair.[4] Open exploration of the sac with evacuation of seroma under pressure in 4 patients and directed angiography in the fifth patient confirmed that there was no communication between the sac and the arterial blood flow. All 5 made an uneventful recovery, including the fifth patient who had no intervention. It would have been helpful to be able to use the term *endotension* to describe the patients in this report, and indeed, the review process suggested using the term *without endoleak* to replace *in the absence of communication between the sac and the arterial blood flow.* This usage and obvious economy of words was found acceptable by the editors.

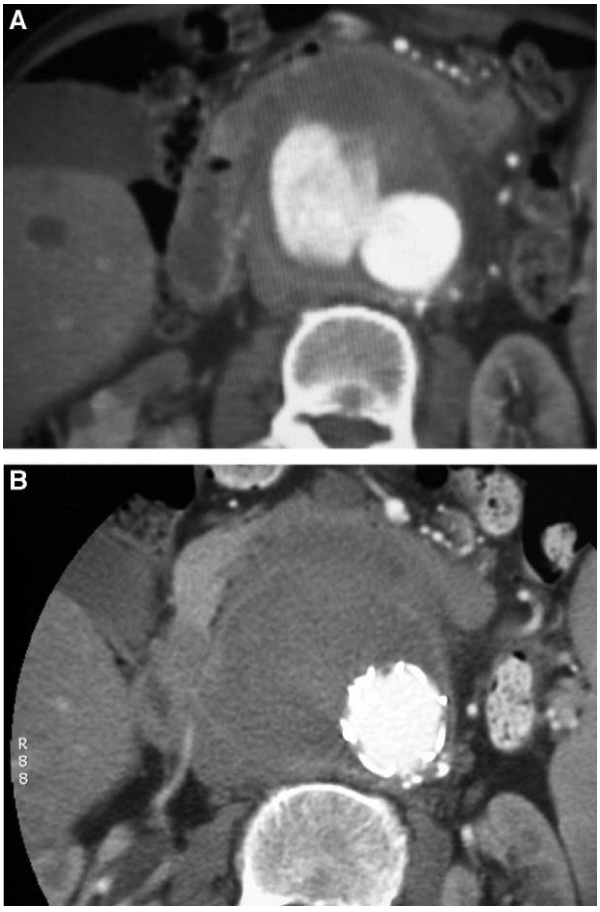

Figure 1. A, Contrast computed tomography (CT) demonstrating sac enlargement (9-cm diameter) 15 years after open abdominal aortic aneurysm repair due to a defect in the mid portion of the body of the bifurcated graft implanted at previous open repair. **B**, Contrast CT confirming exclusion of the recurrent aneurysm sac from the circulation after endovascular repair.

We were both involved in the treatment of a further patient who presented acutely with a 2-week history of abdominal pain and sac enlargement (to a 9-cm diameter) 15 years after open AAA repair. Contrast computed tomography (CT) demonstrated that the sac enlargement was due to a defect in the mid portion of the body of the bifurcated graft implanted at a previous open repair (Fig *A*) This patient made an uneventful recovery after endovascular repair of the graft defect (Fig *B*). It seems that the pathology in this case could be accurately described as sac enlargement due to a type III endoleak. Some may suggest that *false aneurysm* is a more appropriate description. By definition, however, a false aneurysm is devoid of any components of the arterial wall, with the effused blood being retained by surrounding tissues. In this case, it is likely that at least some parts of the recurrent aneurysm were being retained by the original aneurysm sac, as evidenced by its circular shape surrounding the original graft and by calcification in the wall.

If this proposal were adopted, little change would be required to the existing definitions[1-3]:

1. *Endoleak* is a condition associated with endovascular *and open* vascular grafts, defined by the persistence of blood flow outside the lumen of the endovascular *or open* graft but within an aneurysm sac or adjacent vascular segment being treated by the graft.

2. *Endotension* is defined as persistent or recurrent pressurization of an aneurysm sac without endoleak that follows an endovascular *or open* aneurysm repair.

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